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10/085,773	02/26/2002	Robert Bruce Ganton	UTL 00080	1999

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EXAMINER	
PATEL, HETUL B	
ART UNIT	**PAPER NUMBER**
2186	4

DATE MAILED: 04/27/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

P24

Office Action Summary	Application No.	Applicant(s)	
	10/085,773	GANTON, ROBERT BRUCE	
	Examiner	Art Unit	
	Hetul Patel	2186	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *03* MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *08 March 2004*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-10 and 12-43* is/are pending in the application.

4a) Of the above claim(s) *11* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-10 and 12-43* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. This action is responsive to communication filed on March 8, 2004. This amendment has been entered and carefully considered. Claim 11 is cancelled; claims 1-10 and 12-43 are again presented for examination.

2. All the objections cited in the previous office action have been withdrawn due to the Amendment filed on March 8, 2004.

3. Applicant's arguments filed on March 8, 2004 have been fully considered but they are not deemed to be persuasive.

4. The rejection of claims 1-10 and 12-43 as in the Office Action mailed December 5, 2003 (paper number 2) is respectfully maintained and reiterated below for Applicant's convenience.

Claim Objections

5. Claims 34-38 are objected to because of the following informalities:

As per claim 34, it should be stated as "... the clocked, non-addressable, non volatile memory ..." instead of "... the the clocked, non-addressable, non volatile memory ..." as disclosed in this application.

Also, the similar changes are required in claims 35-38.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the

applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

6. Claims 1-10, 12-30 and 31 are rejected under 35 U.S.C. 102(e) as being anticipated by Kwon (USPN: 2003/0050087).

As per claim 1, Kwon discloses a wireless communications device (the mobile phone 200 in Fig. 2A), comprising:

- a wireless communications device circuit (mobile phone) for communicating over an air interface (ANT in Fig. 2A);
- indirectly-read memory that is not volatile (NAND-type flash memory 210 in Fig. 2A);
- data (main program and user data) stored in the indirectly-read memory (NAND-type flash memory);
- an addressable volatile memory (first and second RAM 230, 235 in Fig. 2A) coupled to the indirectly-read memory;
- a interface controller (MPU 220 in Fig. 2A) coupled to the indirectly-read memory and the addressable volatile memory;
- interface logic (NAND interface circuit ASIC 215, in Fig. 2A) coupled to the interface controller wherein the interface logic and the interface controller are configured to transfer the data from the indirectly-read memory to the addressable volatile memory; and
- a processing unit (microprocessor 220 in Fig. 2A) coupled to the addressable volatile memory and the wireless communications device circuit, the processing

unit configured to control the wireless communications device circuit based upon the data stored in the volatile memory (e.g. see paragraphs 24-26 on page 2).

As per claims 2, 3 and 10, Kwon discloses the claimed invention as described above, and furthermore, Kwon teaches the wireless communications device, wherein the flash memory can be a NAND-type flash memory (which is referred as serial flash memory in the 'Background of the Invention' section of this application) or a NOR-type flash memory (which is referred as parallel flash memory in the 'Background of the Invention' section of this application) (e.g. see paragraph 26 on page 2). Accordingly, either the clocked parallel flash memory or the clocked serial flash memory can be used as the indirectly-read memory, based on this rationale, claims 2, 3 and 10 are rejected.

As per claims 4 and 5, Kwon teaches the wireless communications device, which uses the NAND-type flash memory. The NAND-type flash memory is one of the non-volatile memory type being implemented in Kwon's system; in addition, neither Applicant's specification nor the claimed invention disclose that different type of non-volatile memories would yield different function of the system operation. Therefore, any type of non-volatile memories including the indexed addressable memory and the addressable, serially interfaced memory can be used in the place of NAND-type flash memory. Based on this rationale, claims 4 and 5 are rejected.

As per claim 6, Kwon discloses the claimed invention as described above, and furthermore, Kwon teaches the wireless communications device, wherein the addressable volatile memory (RAM1 and RAM2 230, 235 in Fig. 2A) is a Random Access Memory (RAM) (e.g. see lines 8-9 of paragraph 25); in addition, neither

Applicant's specification nor the claimed invention disclose that different type of volatile memories would yield different function of the system operation. Therefore, any type of volatile memories including the dynamic random access memory (DRAM) and the static random access memory (SRAM), can be used. Kwon also teaches that the wireless communications device uses the NAND-type flash memory. The NAND-type flash memory (which is referred as indirectly-read memory in the 'Background of the Invention' section of this application) is one of the non-volatile memory being implemented in Kwon's system; in addition, neither Applicant's specification nor the claimed invention disclose that different type of non-volatile memories would yield different function of the system operation. Therefore, any type of non-volatile memories including Multimedia Card, Smart Media Card, SD Card, and Memory Stick, can be used in place of the NAND-type flash memory.

As per claim 7, Kwon discloses the claimed invention as described above, and furthermore, Kwon discloses that the program stored in the indirectly-read memory (the NAND-type flash memory) gets copied into the volatile memory (the RAM1) to execute that program by the RAM2 (e.g. see paragraph 25 on page 2). The volatile memory (RAM1 and RAM2) of the wireless communications device (the mobile phone) taught by Kwon is smaller in size compare to the indirectly-read memory (the NAND-type flash memory). Therefore, when the interface controller (the MPU) requests the data stored in the indirectly-read memory, the device has to transfer only a portion of the data stored in the indirectly-read memory to the addressable volatile memory due to the limited space and if the interface controller requests the another data, which is currently not

stored in the addressable volatile memory, the memory interface will transfer that data to the addressable volatile memory for further processing. Based on this rationale, the claim 7 gets rejected.

As per claim 8, Kwon discloses the claimed invention as described above, and furthermore, Kwon teaches the wireless communications device comprising: a read only memory (ROM of ASIC 215 in Fig. 2A) that contains boot code; and volatile memory (RAM1 230 in Fig. 2A), wherein when the wireless communications device is powered on (i.e. at the device reset time in step 300 of the flow chart shown in the Fig. 3), the boot code is executed (i.e. performs the initialization operation) and the interface controller determines whether indirectly-read memory is connected to the wireless communications device (i.e. connection of the flash memory is checked by checking the contents of the flash memory in the step 304 of the flow diagram shown in the Fig. 3) and wherein if the indirectly-read memory is connected to the wireless communications device, the interface controller and interface logic transfer data stored in the indirectly-read memory to the volatile memory (i.e. data gets transferred from the flash memory to the RAM in the step 312 of the flow diagram shown in the Fig. 3) (e.g. see paragraphs 33-35 on page 3) .

As per claim 9, Kwon discloses the claimed invention as described above, and furthermore, Kwon teaches the wireless communications device, wherein the wireless communications device circuit (RAM2 235 in Fig. 2A) is implemented inside the volatile memory (e.g. see Fig. 2A and paragraph 25).

As per claims 12-17, according to the Fig. 2A, the interface controller, which is coupled to the flash memory and the RAM, and the processing unit, which is coupled to the RAM and the wireless communications device circuit, are embedded in the MPU, taught by Kwon, since the flash memory, the RAM and the wireless communications device circuit are coupled to the MPU. The MPU is the main central processing unit (CPU) of the wireless communications device (the mobile phone). Thus the interface controller and the processing unit are a single MPU. The MPU is the main central processing unit (CPU) of the wireless communications device and it is very well known in the art that the central processing unit can also be referred as, either MPU, CPU, processor, microprocessor, the heart of the system, controller or microcontroller, based on this rationale, claims 12-17 are rejected.

As per claims 18-29, Kwon discloses the claimed invention as described above, and furthermore, Kwon teaches the wireless communications device comprising the NAND-type flash memory which stores all application programs as well as other types of user data (e.g. see lines 3-7 of paragraph 25). Some of these application programs, for example, an operating system and calibration parameters, are critical to the operation of the wireless communications device; and some of these application programs, for example, interface information, a recent call list, display settings, roaming preferences, ringer preferences and a phone book, are not critical to the operation of the wireless communications device. Based on this rationale, claims 18-29 are rejected.

As per claim 30, Kwon discloses the claimed invention as described above, and furthermore, Kwon teaches the wireless communications device comprises a power amplifier (power and reset 260 in the Fig. 2A).

As per claim 31, Kwon discloses the claimed invention as described above, and furthermore, Kwon teaches the wireless communications device comprises a user interface (the user interface 250 in the Fig. 2A).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

7. Claims 32-39, 41-42 and 43 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kwon in view of Lofgren et al. (USPN: 2002/0032843) hereinafter, Lofgren.

As per claim 32, Kwon teaches a method for managing a memory in a wireless communications device (the mobile phone 200 in Fig. 2A), comprising the steps of: sending a start signal to a clocked, non-addressable, non volatile memory (flash memory) from a controller (MPU); reading data from the clocked, non-addressable, non volatile memory (flash memory); transferring the data to a volatile addressable memory (RAM); reading the data from the volatile addressable memory (RAM); controlling a

wireless communications device circuit responsive to the data (e.g. see paragraph 34 on page 3 and Fig. 3).

However, Kwon does not teach that the controller, which sends the start signal (and also data, addresses and other control signals) to the clocked, non-addressable, non volatile memory, is a serial interface controller. Lofgren, on the other hand, teaches that by having a serial interface, a controller can be designed to support memory devices of differing capacities without modifications to the system (e.g. see page 4, paragraph 60). Accordingly, it would have been obvious to one of ordinary skill in the art at the time of the current invention was made to implement the serial interface controller as taught by Lofgren in Kwon's method. In doing so, future memory devices of different capacities can be connected to the same controller without hardware changes resulting in forward and backward compatibility between different memory modules. Also, it is well-known and notorious old in the art that by using a serial interface instead of parallel interface, less hardware (i.e. pin counts) is required. Therefore, it is being advantageous.

As per claim 33, the combination of Kwon and Lofgren discloses the claimed invention as described above, and furthermore, Kwon teaches the method for managing a memory in the wireless communications device, wherein the volatile memory (RAM1 and RAM2 230, 235 in Fig. 2A) is a Random Access Memory (RAM) (e.g. see lines 8-9 of paragraph 25); in addition, neither Applicant's specification nor the claimed invention disclose that different type of volatile memories would yield different function of the system operation. Therefore, any type of volatile memories including the dynamic

random access memory (DRAM) and the static random access memory (SRAM) can be used.

As per claim 34, the combination of Kwon and Lofgren discloses the claimed invention as described above, and furthermore, Kwon teaches the method for managing a memory in the wireless communications device, wherein the NAND-type flash memory (which is referred as serial memory in the 'Background of the Invention' section of this application) is one of the non-volatile memory being implemented in Kwon's system; in addition, neither Applicant's specification nor the claimed invention disclose that different type of non-volatile memories would yield different function of the system operation. Therefore, any type of non-volatile (clocked, non-addressable) memories including Multimedia Card, Smart Media Card, SD Card, and Memory Stick, can be used in place of the NAND-type flash memory.

As per claim 35, the combination of Kwon and Lofgren discloses the claimed invention as described above, and furthermore, Kwon teaches the method for managing the memory in the wireless communications device, which is a portable radio telephone (mobile phone; e.g. see title), comprising the step of determining whether the clocked, non-addressable, non volatile memory is connected to the portable radio telephone (i.e. the mobile phone initializes the RAM1 by clearing and assigning a code address to it in the step 310 of the flow diagram shown in the Fig 3. This step will give error to the device if the RAM1 is not connected to the mobile phone) and wherein only if the clocked, non-addressable, non volatile memory is connected to the portable radio telephone then transferring data stored in the clocked, non-addressable, non volatile

memory to the volatile memory (i.e. the program code gets transferred into the RAM1 in the step 312 of the flow diagram shown in the Fig 3 after the initialization step 310. The step 312 will not get executed without the successful execution of the step 310, thus the program code data gets transferred to the RAM1 only if the RAM1 is connected to the mobile phone).

As per claim 36, the combination of Kwon and Lofgren discloses the claimed invention as described above, and furthermore, Kwon teaches the method for managing the memory in the wireless communications device, wherein the volatile memory (RAM1 and RAM2 230, 235 in Fig. 2A) is a Random Access Memory (RAM) (e.g. see lines 8-9 of paragraph 25). Since Kwon does not specifically disclose that what kind of RAM get used in the wireless communications device (the mobile phone), any kind of RAM, such as the dynamic random access memory (DRAM) or the static random access memory (SRAM), can be used as the volatile memory.

As per claim 37, the combination of Kwon and Lofgren discloses the claimed invention as described above, and furthermore, Kwon teaches the method for managing a memory in the wireless communications device, wherein the NAND-type flash memory (which is referred as clocked, non-addressable, non volatile memory in the 'Background of the Invention' section of this application) is one of the non-volatile memory being implemented in Kwon's system; in addition, neither Applicant's specification nor the claimed invention disclose that different type of non-volatile memories would yield different function of the system operation. Therefore, any type of

non-volatile memories including Multimedia Card, Smart Media Card, SD Card, and Memory Stick, can be used in place of the NAND-type flash memory.

As per claim 38, the combination of Kwon and Lofgren discloses the claimed invention as described above, and furthermore, Kwon discloses that the program stored in the clocked, non-addressable, non volatile memory (the NAND-type flash memory) gets copied into the volatile memory (the RAM1) to execute that program by the RAM2 (e.g. see paragraph 25 on page 2). The volatile memory (RAM1 and RAM2) of the wireless communications device (the mobile phone) taught by Kwon is smaller in size compare to the indirectly-read memory (the NAND-type flash memory). Therefore, when the serial interface controller (the MPU) requests the data stored in the indirectly-read memory, the device has to transfer only a portion of the data stored in the indirectly-read memory to the volatile memory due to the limited space and if the serial interface controller requests the another data, which is currently not stored in the volatile memory, the memory interface will transfer that data to the volatile memory for further processing. Based on this rationale, the claim 38 gets rejected.

As per claim 39, Kwon discloses a wireless communications device, comprising:

- a portable radio telephone (the mobile phone 200 in Fig. 2A), comprising:
  - an addressable volatile memory (first and second RAM 230, 235 in Fig. 2A);
  - a controller (MPU 220 in Fig. 2A) coupled to the addressable volatile memory;
  - interface logic (NAND interface circuit ASIC 215, in Fig. 2A) coupled to the controller;

- a wireless communications device circuit (RAM2 235in Fig. 2A) coupled to the controller; and
- a processing unit (microprocessor 220 in Fig. 2A) coupled to the volatile memory and the wireless communications device circuit and configured to control the wireless communications device circuit based upon the data stored in the volatile addressable memory; and

- an accessory, comprising;

- indirectly-read memory that is not volatile (NAND-type flash memory 210 in Fig. 2A); and
- data stored in the indirectly-read memory; wherein the interface logic and the controller are configured to transfer the data from the indirectly-read memory to the addressable volatile memory (e.g. see paragraphs 24-26 on page 2).

However, Kwon does not teach that the controller, which is coupled to the addressable volatile memory, the interface logic and the wireless communication device circuit, is a serial interface controller. Lofgren, on the other hand, teaches that by having a serial interface, a controller can be designed to support memory devices of differing capacities without modifications to the system (e.g. see page 4, paragraph 60). Accordingly, it would have been obvious to one of ordinary skill in the art at the time of the current invention was made to implement the serial interface controller as taught by Lofgren in Kwon's method. In doing so, future memory devices of different capacities can be connected to the same controller without hardware changes resulting in forward and backward compatibility between different memory modules. Also, it is well-known

and notorious old in the art that by using a serial interface instead of parallel interface, less hardware (i.e. pin counts) is required. Therefore, it is being advantageous.

As per claim 41, the combination of Kwon and Lofgren discloses the claimed invention as described above, and furthermore, Kwon teaches the wireless communications device, wherein the volatile memory (RAM1 and RAM2 230, 235 in Fig. 2A) is a Random Access Memory (RAM) (e.g. see lines 8-9 of paragraph 25); in addition, neither Applicant's specification nor the claimed invention disclose that different type of volatile memories would yield different function of the system operation. Therefore, any type of volatile memories including the dynamic random access memory (DRAM) and the static random access memory (SRAM), can be used. Kwon also teaches that the wireless communications device uses the NAND-type flash memory. The NAND-type flash memory (which is referred as indirectly-read memory in the 'Background of the Invention' section of this application) is one of the non-volatile memory being implemented in Kwon's system; in addition, neither Applicant's specification nor the claimed invention disclose that different type of non-volatile memories would yield different function of the system operation. Therefore, any type of non-volatile memories including Multimedia Card, Smart Media Card, SD Card, and Memory Stick, can be used in place of the NAND-type flash memory.

As per claim 42, the combination of Kwon and Lofgren discloses the claimed invention as described above, and furthermore, Kwon teaches the wireless communications device comprises a power amplifier (power and reset 260 in the Fig. 2A).

As per claim 43, the combination of Kwon and Lofgren discloses the claimed invention as described above, and furthermore, Kwon teaches the wireless communications device comprises a user interface (the user interface 250 in the Fig. 2A).

8. Claim 40 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kwon in view of Lofgren, further in view of AAPA (Application Admitted Prior Art).

The combination of Kwon and Lofgren discloses the claimed invention as described above in which the data gets separated and transferred from the flash memory to the RAM by the MPU. (i.e. see Fig. 2A). However, both Kwon and Lofgren failed to teach that the MPU converts the data from the serial format to the parallel format before transferring it to the RAM. AAPA, on the other hand, discloses that one skilled in the art would recognize that there are numerous ways to perform the conversion from serial data to parallel data and vice versa (e.g. see last paragraph of page 12 of this application). Also, it is very well known in the art that the volatile memory (RAM) operates much faster and capable of performing tasks using data in the parallel format.

Accordingly, it would have been obvious to one of having ordinary skills in the art at the time of the current invention was made to implement the wireless communications device taught by the combination of Kwon and Lofgren in such a way so it can separate the address and the data read serially from the serial flash memory, convert that separated data from the serial format to the parallel format as taught by AAPA and then transfer that separated data to the volatile memory in the parallel format for further processing to increase the performance of the wireless communications device because

the CPU can read and write the data and addresses from the volatile memory much faster in parallel format compare to the serial format.

Remarks

9. As to the remark, Applicant asserted that

(a) With regards to independent claim 1, Kwon does not teach or suggest each and every element of the claim, specifically, "indirectly-read memory that is not volatile". Furthermore, Applicant argues that the indirectly-read memory is defined as "clocked serial memory, clocked parallel memory, indexed addressable memory, and addressable devices that use some from of serial interface" as disclosed in the specification. (page 13, line 9 et seq.)

(b) With regards to (amended) independent claims 32 and 39, Kwon does not teach or suggest the use of the serial interface controller as claimed.

Examiner respectfully traverses Applicant's remark for the following reasons:

First of all, Examiner would like to emphasize that as stated in the abstract and title, the invention of Kwon is related to the wireless communications device that uses a NAND-type flash memory, a type of non-volatile memory.

With respect to (a), broadly drafted claim 1 limitations do not address serial interface. Furthermore, the lines 8-9 on page 7 of the specification, states "Serial memory is used to illustrate the concepts, however it will be clear to one skilled in the art that other types of memory can be used.", i.e. parallel memory can be used too. Also, Applicant defines "indirectly-read memory" as "clocked serial memory, clocked

parallel memory, indexed addressable memory, and addressable devices that use some from of serial interface" on page 7, second paragraph. However, it seems like the use of serial interface is referred to only clocked serial memory and not the clocked parallel memory because the clocked parallel memory has to use some type of parallel interface.

With respect to (b), arguments with respect to (amended) independent claims 32 and 39 have been fully considered but deemed to be moot in view of new ground rule rejection.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hetul Patel whose telephone number is (703) 305-6219. The examiner can normally be reached on M-F 8-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matt Kim can be reached on (703) 305-3821. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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